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**GROUND WATER QUALITY BUREAU (GWQB)
DISCHARGE PERMIT RENEWAL
EXISTING COPPER MINE FACILITY
Issued under 20.6.2 and 20.6.7 NMAC**

Sent Via Electronic Mail

Mine Facility Name: SX/EW Plant and Reservoirs 6 and 7

GWQB Discharge Permit No.: DP-591
GWQB TEMPO AI No.: 526

Permittee Name/Responsible Party: Freeport-McMoRan Chino Mines Company
Mailing Address: P.O. Box 10
Bayard, NM 88023

Mine Facility Contact: Kariann Sokulsky; (575) 912-5386
Mine Facility Location: 99 Santa Rita Mine Road
Vanadium, NM 88023

County: Grant County

Permitting Action: Renewal
Renewal Effective Date: DATE
Renewal Expiration Date: DATE

NMED Permit Contact: Brad Reid; (505) 827-2963
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Rebecca Roose, Director
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Date

draft

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Part A GENERAL INFORMATION

A100 Introduction

- A. The New Mexico Environment Department (NMED) issues this Ground Water Discharge Permit Renewal, DP-591 (Discharge Permit) to Freeport-McMoRan Chino Mines Company (permittee) pursuant to the New Mexico Water Quality Act (WQA), NMSA 1978, §§ 74-6-1 to 74-6-17, and the New Mexico Water Quality Control Commission (WQCC) Regulations, 20.6.2 NMAC (Ground and Surface Water Protection) and 20.6.7 NMAC (Ground Water Protection – Supplemental Permitting Requirements for Copper Mine Facilities; aka the Copper Mine Rule). NMED is issuing this Discharge Permit to control the discharge of water contaminants from the Solution Extraction and Electrowinning (SX/EW) Plant, Reservoirs 6 and 7, and associated facilities for the protection of groundwater and those segments of surface water gaining from groundwater inflow, for present and potential future use as domestic and agricultural water supply and other uses, and to protect public health.
- B. Pursuant to this Discharge Permit, the permittee is authorized to discharge a maximum of 43,200,000 gallons per day (gpd) of process water to the SX/EW Plant and then to permitted leach stockpiles regulated under Discharge Permits DP-376, DP-459, and DP-526 for the purpose of leaching copper from low-grade ore. In addition, impacted stormwater and process water from the SX/EW Plant and other areas within DP-591 are regulated pursuant to this Discharge Permit. These discharges may move directly or indirectly into groundwater of the State of New Mexico that has an existing concentration of 10,000 milligrams per liter (mg/L) or less of total dissolved solids (TDS) within the meaning of Section 20.6.2.3104 and Subsection A of 20.6.2.3101 NMAC. The discharge may contain water contaminants or toxic pollutants elevated above the standards of Section 20.6.2.3103 NMAC in compliance with the terms and conditions of this Discharge Permit.
- C. The permittee is authorized to discharge water contaminants pursuant to this Discharge Permit, which requires compliance with 20.6.2 NMAC and 20.6.7 NMAC and is enforceable by NMED.

A101 Applicable Regulations

- A. The permittee is discharging from a facility that meets the definition of “existing copper mine facility.” Sections 20.6.2.3000 through 20.6.2.3114 NMAC and 20.6.7 NMAC apply to discharges specific to copper mine facilities and their operations.

- B. The discharge from the facilities regulated pursuant to this Discharge Permit are not subject to any of the exemptions of Section 20.6.2.3105 NMAC.
- C. Groundwater quality as observed in monitoring wells required by C106.E of this Discharge Permit is subject to the criteria of Sections 20.6.2.3101 and 20.6.2.3103 NMAC except those excluded pursuant to Subsection D of 20.6.7.24 NMAC.

A102 Permit Duration

- A. Pursuant NMSA 1978 § 74-6-5(I) and Subsection H of 20.6.2.3109 NMAC, the term of this Discharge Permit Renewal is **five (5) years** from the effective date.
- B. If the permittee submits an application for renewal in accordance with Subsection F of 20.6.2.3106 NMAC, then the existing discharge permit shall not expire until NMED approves or disapproves the application for renewal.

A103 Terms of Permit Issuance

- A. **Permit Fees** - As a discharge permit associated with Freeport-McMoRan Chino Mines Company, the permittee shall remit an annual permit fee payment equal to the applicable permit fee based on mine size listed in Subsection A of 20.6.7.9 NMAC on August 1 of each year until termination of all discharge permits for the Chino Mines Company. [20.6.7.9.A NMAC]
- B. **Transfer of Discharge Permit** - Prior to the transfer of any ownership, control, or possession of this permitted facility or any portion thereof, the permittee shall notify the proposed transferee in writing of the existence of this Discharge Permit and include a copy of this Discharge Permit with the notice. The permittee shall deliver or send by certified mail to NMED a copy of the notification and proof that such notification has been received by the proposed transferee. [20.6.7.38 NMAC and 20.6.2.3111 NMAC]
- C. **Permit Renewal** - To renew this Discharge Permit, the permittee shall submit an application and associated fees for renewal at least 270 days prior to the expiration date of this Discharge Permit (by DATE) in accordance with Sections 20.6.7.9, 20.6.7.10, and 20.6.7.11 NMAC.
- D. **Additional Conditions** - In addition to the requirements of 20.6.7 NMAC, the permittee shall comply with the following additional conditions as authorized by Subsection I of 20.6.7.10 NMAC pursuant to WQA 74-6-5: Condition C101.D, Condition C106.B, and Condition C107.E.

Part B FACILITY SPECIFIC INFORMATION

B100 History and Facility Description

- A. The Chino Mine is an open pit copper mine facility owned by Freeport-McMoRan Chino Mines Company which covers an area of approximately 35,000 acres. The Chino Mine consists of the Santa Rita Open Pit, associated waste rock and leach stockpiles, collection systems, a SX/EW plant, a concentrator and associated mineral processing units, an active tailing impoundment, and reclaimed mine units. The Chino Mine is regulated pursuant to multiple operational Ground Water Discharge Permits, a supplemental discharge permit for closure, and an abatement plan.
- B. Pregnant leach solution (PLS) collected from the Lampbright (DP-376) and North In-Pit (DP-459) leach systems is transferred to the SX/EW Plant for processing. PLS from the Whitewater Leach System (DP-526) is either transferred to the SX/EW for processing, or to the Lampbright Leach System (via the Raffinate Tank or Raffinate Pond) for additional leaching.
- C. The SX/EW Plant and associated mine units were constructed in 1988 and the DP-591 permit area currently covers approximately 160 acres. Copper is stripped from the PLS at the SX/EW Plant. Prior to processing at the SX/EW Plant, PLS is stored in the synthetically lined PLS Feed Pond. From the PLS Feed Pond, PLS is gravity conveyed to the SX Circuit.
- D. The SX Circuit consists of two parallel trains of process tanks (strippers, mixers, settlers) used to concentrate copper-bearing PLS into electrolyte using kerosene-based organic reagents and solvents. The PLS is separated into raffinate, loaded or used organic, and rich and lean electrolyte. The used organic and lean electrolyte are recycled primarily through the Tank Farm. Rich electrolyte (i.e., enriched with copper) is filtered at the Tank Farm then piped to the Tank House where copper cathodes are harvested using an electrolytic procedure (i.e., electrowinning). The plated copper cathode sheets are rinsed, loaded onto trucks, and shipped offsite.
- E. After copper extraction is complete, raffinate is discharged from the SX/EW Plant to the stainless steel Raffinate Tank or double synthetically lined Raffinate Pond. Sulfuric acid is added to optimize pH before the raffinate is piped to and discharged on the Main and South Lampbright, North In-Pit, South, and West Leach Stockpiles to begin the leaching cycle again.
- F. Reservoirs 6 and 7 are two large earthen and concrete reservoirs used to manage process water and impacted stormwater and to store PLS that has high turbidity due to storm events.
- G. Numerous spills in the vicinity of the Raffinate Tank and Raffinate Pond and proximal pipeline network have impacted groundwater directly through infiltration or indirectly by evaporation

and precipitation of salts. The salts may dissolve during precipitation events and remobilize metals and residual acidity into groundwater and surface waters.

B101 Permitting History

- A. The Discharge Plan for DP-591 includes renewal application materials submitted by the permittee to NMED dated May 4, 2011, an addendum to the application dated August 28, 2019, and materials contained in the administrative record prior to issuance of this Discharge Permit. As part of the application process, the permittee also provided a document dated October 8, 2015 and revised on April 30, 2020, referred to as the Chino North Mine Area (NMA) Master Document (NMA Master Document) which addresses Copper Mine Rule application requirements and is applicable to all the permittee's discharge permits in the NMA, including DP-591. The Discharge Plan for DP-591 also includes the Sitewide Water Management Plan required to be submitted annually by DP-459 and applicable to all discharge permits in the NMA. In addition, the Discharge Plan includes information and materials submitted as part of the original plan approved on July 21, 1997, renewed on September 1, 2006; and amended on April 14, 2008, January 12, 2012, January 17, 2012, November 13, 2013, April 28, 2015, and April 25, 2018.

B102 Facility Location, Groundwater and Process Water Characteristics

- A. The mine units regulated pursuant to DP-591 are located approximately 4 miles northeast of Bayard and 3 miles southeast of Hanover in Section 25 and 26, T17S, R12W in Grant County.
- B. Groundwater beneath the mine units regulated pursuant to DP-591 is at a depth of approximately 3 to 297 feet and had a pre-discharge TDS concentration of approximately 255 milligrams per liter.
- C. The SX/EW Plant and Reservoirs 6 and 7 and associated pipelines process, transport, and store acidic solutions of process water, and impacted stormwater. These solutions typically exceed the water quality standards of Section 20.6.2.3103 NMAC for aluminum, cadmium, chloride, chromium, cobalt, copper, fluoride, iron, lead, manganese, nickel, selenium, sulfate, TDS, and zinc, and is outside the acceptable range for pH.
- D. Water quality of sources used for dust control in the area regulated pursuant to DP-591 typically exceeds the water quality standards of Section 20.6.2.3103 NMAC for TDS, sulfate, iron, and manganese, and intermittently exceeds water quality standards for pH, cobalt, fluoride, and selenium.

B103 Authorized Mine Units

This Discharge Permit contains requirements associated with the following mine units as identified in the Discharge Plan. All mine units listed below meet the definition of “existing” mine units pursuant to the Copper Mine Rule and are located inside the Open Pit Surface Drainage Area (OPSDA) as defined by Section 20.6.7.7 NMAC, unless otherwise noted.

A. SX/EW Plant

1. The SX/EW Plant covers a footprint of approximately 51 acres. The SX/EW Plant includes the SX Circuit, Tank Farm, Tank House, and associated infrastructure, including multiple pipelines and tanks.
 - a. SX Circuit - Each of the two flow through trains of the SX Circuit consists of three tanks (6 tanks total) with a storage capacity of approximately 103,000 gallons per tank. The entire infrastructure is constructed upon a concrete foundation. The foundation includes a concrete-lined gravity drain (or trench) system that conveys solutions from precipitation events or, in the case of a pipeline break within the SX Circuit to the Raffinate Tank. The trench widths range from approximately 30 feet around the perimeter to 13 feet between the tanks. Trench depths are approximately 8 feet.
 - b. Tank Farm - The SX/EW Tank Farm consists of numerous tanks situated on a concrete platform enclosed with a concrete wall approximately 4 feet in height. The west side of the Tank Farm consists of 12 tanks used to store and recycle organic products used in the SX Circuit. The east side consists of tanks used to filter suspended solids from the rich electrolyte before it is piped to the Tank House. A center collection trench collects stormwater and minor spills from both sides of the Tank Farm. Solutions captured in the collection trench report to a drain located on the south side of the farm which discharges to the Raffinate Tank. There is also an overhead trestle between the SX Circuit and the Tank Farm containing numerous pipes. In the event of a pipeline break from this area, process water will report to the Raffinate Tank via the trench systems; some solutions may flow a short distance to the Raffinate Pond over permeable but impacted surface materials.
 - c. Tank House - The SX/EW Tank House is a covered industrial building used for the electrowinning process. A center drain collects any wash down process water or spilled solutions. Solutions captured in the center drain report to the trench system in the Tank Farm. A drain system outside of the Tank House is used to collect wash down process water and stormwater; solutions captured in this drain system also report to the Tank Farm trench system.

B. Impoundments

1. Reservoir 6 - Reservoir 6 is an unlined earthen process water impoundment constructed with a concrete-faced dam. It has a storage capacity of approximately 93,110,000 gallons

and a surface area of 2.9 acres. Reservoir 6 receives excess flows from Reservoir 4A, Reservoir 5 North and South, Reservoir 7, the Raffinate Tank and Raffinate Pond, Lee Hill Booster Station #2, the Princess Shaft, and the Estrella Sub-pit. Process water in Reservoir 6 is pumped to Reservoir 7 or the Estrella Sub-pit using two barge pumps. Reservoir 6 is equipped with an overflow pipe that conveys process water discharges to the Estrella Sub-pit during upset conditions (i.e., during a power or pipeline shutdown event), high-volume precipitation events, or maintenance and repair activities.

2. Reservoir 7 - Reservoir 7 is an unlined earthen process water impoundment constructed with a concrete-faced dam. It has a storage capacity of approximately 82,000,000 gallons and surface area of 8.6 acres. It is located approximately 1000 feet south of Reservoir 6 and 2000 feet southwest of the SX/EW Plant. Reservoir 7 receives flows of process water and impacted stormwater from various locations, including Reservoir 4A, Reservoir 5 North and South, Reservoir 6, the Reservoir 8 area, the Raffinate Tank and Raffinate Pond, 5900 Sump, Southside PLS Tank, Lee Hill Booster Station #2, Princess Shaft, Estrella Sub-pit, and the SXIW-2 interceptor well. Process water in Reservoir 7 is pumped to either Reservoir 6, the PLS Feed Pond, the Raffinate Tank, or Raffinate Pond using two barge pumps. An unlined secondary containment structure is located downstream of the dam face. A concrete sump equipped with a pump is located at the bottom of the containment. The secondary containment structure captures overflow from Reservoir 7 and process water spills from proximal pipeline corridors.
3. PLS Feed Pond - The PLS Feed Pond is an 80-mil high-density polyethylene (HDPE) lined impoundment that has a storage capacity of approximately 1,400,000 gallons and surface area of 0.12 acres. It is located at the northern edge of the SX/EW Plant and it stores PLS for delivery to the SX/EW Plant. Solutions in the PLS Feed Pond are maintained at a constant level with gravity overflow to SX/EW Plant.
4. Raffinate Pond - The Raffinate Pond is an 80-mil HDPE double-lined impoundment with a leak collection system and a capacity of 2,000,000 gallons. Fluids collected in the leak collection system are returned to the Raffinate Pond. The Raffinate Pond receives raffinate discharged from the SX/EW Plant for use in the leaching systems, process water flows from Reservoir 7, and process water and impacted stormwater from the Santa Rita Open Pit. The Raffinate Pond also receives filter backwash water, process water, wash down water, domestic wastewater, and laboratory solutions from the SX/EW Tank House and Tank Farm.

The Raffinate Pond was previously authorized under DP-591 for discharge of raffinate only during upset conditions. The pond was re-lined and a second liner was installed in

late 2019. The re-lined Raffinate Pond is used in tandem with the adjacent stainless steel Raffinate Tank to store and manage raffinate under normal operations. Use of the Raffinate Pond will allow for periodic cleaning of the Raffinate Tank and result in less entrained organic constituents being discharged to the leaching systems.

5. Fleming Pond - The un-lined Fleming Pond with an earthen dam has a storage capacity of 8.7 acre-feet with a surface area of 0.8 acres. Process water from the pond is conveyed to the Lampbright Spout for use as dust suppression water. Pond levels are maintained with a pump.

C. Sumps, Tanks, Pipelines and Other Containment Systems

1. Raffinate Tank - The stainless steel Raffinate Tank has a capacity of 900,000 gallons. The Raffinate Tank receives process water flows from Reservoir 7; process water and impacted stormwater from the Santa Rita Open Pit; filter backwash water, process water, wash down water, domestic wastewater, and laboratory solutions from the SX/EW Tank House and Tank Farm. Two small tanks are located proximal to the Raffinate Tank and receive skimmed organic product from the Raffinate Tank.
2. There are numerous existing above-ground tanks located at the SX/EW Plant associated with DP-591 that meet the criteria of Paragraph (2) of 20.6.7.23.B NMAC. These include three Sulfuric Acid Storage Tanks, a fire suppression tank, a potable water tank, and numerous tanks at the Tank Farm. These tanks are identified in the Discharge Plan, Table 8 of the NMA Master Document or this Discharge Permit (e.g., B103.A).
3. Pipelines - Pipelines serving the DP-591 mine units, including the PLS and raffinate pipelines serving the SX/EW Plant, consist of HDPE or stainless-steel material and range in size from 6 inches or less in diameter to greater than 16 inches in diameter. The pipelines are described in Table 7 and Figure 4 of the NMA Master Document.

D. Flow Measurement

1. The permittee utilizes flow meters to measure regulated discharge volumes pursuant to this Discharge Permit and as required by the Copper Mine Rule. Flow meters utilized by DP-591 are described in Table 9 and Figure 6 of the NMA Master Document.

E. Truck and Equipment Washing Unit

1. SX/EX Truck and Equipment Wash Pad – The SX/EX Truck and Equipment Wash Pad consists of a concrete pad and is located at the northeast corner of the SX/EW Plant.

B104 Authorized Discharges

The permittee is authorized to discharge water contaminants from the following mine units in accordance with all applicable system design and operational constraints as described in this Discharge Permit and the Discharge Plan. [20.6.2.3109 NMAC]

- A. The permittee is authorized to discharge up to 43,200,000 gpd of process water from the SX/EW Plant to the Raffinate Tank or Raffinate Pond, and then to permitted leach stockpile systems regulated by DP-376, DP-459, and DP-526. Excess process water may be discharged to Reservoir 6 or 7. Permitted discharges to the Raffinate Tank or Raffinate Pond are primarily acidic solutions from the SX/EW Plant and process water and impacted stormwater pumped from the Santa Rita Open Pit (DP-459).
- B. The permittee is authorized to discharge up to 43,200,000 gpd of acidic leach solutions from PLS collection systems located proximal to leach stockpiles to the synthetically lined PLS Feed Pond and then the SX/EW Plant.
- C. The permittee is authorized to discharge up to 50,000 gpd of filter backwash water, 215,000 gpd of process and washdown water, and 36,000 gpd of domestic wastewater and laboratory solutions from the SX/EW Tank House and Tank Farm to the Raffinate Tank or Raffinate Pond.
- D. The permittee is authorized to operate Reservoirs 6 and 7 as described in the most recent version of the Sitewide Water Management Plan and B103.B, as part of the NMA process water management system to collect, store, and transfer discharges of process water and impacted stormwater from various locations, including the SX/EW Plant.
- E. The permittee is authorized to discharge approximately up to 6,000 gpd of impacted groundwater from the SXIW-2 interceptor well to Reservoir 7. [20.6.2.3109 NMAC]
- F. The permittee is authorized to discharge water from the Café Queue Spout, Frog Pond Spout, South Side Spout, Lampbright Spout, and the Island Queue Spout for dust suppression within the area covered by this Discharge Permit. Dust suppression monitoring and reporting requirements are set forth in DP-459.
- G. This Discharge Permit authorizes only those discharges specified herein. Any unauthorized discharges such as spills or leaks must be reported to NMED and remediated as required by Section 20.6.2.1203 NMAC, and any additional requirements listed in this Discharge Permit.

Part C FACILITY SPECIFIC REQUIREMENTS

The permittee shall conduct operations in accordance with the requirements set forth below to ensure compliance with 20.6.2 NMAC.

C100 SX/EW Plant

- A. The permittee shall operate the SX/EW Plant pursuant to the applicable operational requirements of Subsection C of 20.6.7.20 NMAC.

C101 Impoundments

- A. The permittee shall operate Reservoir 6 and Reservoir 7 in accordance with the applicable requirements of Subsection F of 20.6.7.18 NMAC.
- B. To ensure compliance with Paragraph (4) of 20.6.7.18.F NMAC, the permittee shall maintain a minimum pumping capacity of 1000 gpm between Reservoir 6 and Reservoir 7 and a minimum pumping capacity of 2000 gpm from Reservoir 7 to authorized discharge locations.
- C. Within 60 days of the effective date of this Discharge Permit (BY DATE), the permittee shall submit a construction certification report for the recently completed Raffinate Pond upgrades that is consistent with Subsection B of 20.6.7.18 NMAC and required by DP-591 Amendment 06-05, dated April 25, 2018.
- D. PLS Feed Pond Upgrades:
 - 1. Within 90 days of the effective date of this Discharge Permit (by DATE), the permittee shall provide NMED with documentation or a corrective action plan that ensures discharges to the PLS Feed Pond are occurring as designed. If underflow is occurring from the discharge pipe(s) or discharges to the pond are not occurring as designed, the permittee shall submit to NMED for approval a corrective action plan and implementation schedule to repair the discharge pipe(s).

C102 Sumps, Tanks, Pipelines and Other Containment Systems

- A. The permittee shall operate all pipelines, tanks and sumps in existence on the effective date of the Copper Mine Rule in accordance with the applicable requirements of Subsection C of 20.6.7.23 NMAC and Paragraph (2) of 20.6.7.23.B NMAC.
- B. Detailed and complete construction plans and specifications and supporting design calculations for any proposed or required tanks, pipelines, sumps or other containment systems, including any replacements thereof, shall be submitted to NMED pursuant to Paragraph (2) of 20.6.7.17.C NMAC, Section 20.6.7.23 NMAC, and D107 of this Discharge

Permit. This requirement does not apply to portable or temporary tanks, pipelines, sumps, or other containment systems that are subject to periodic relocation during mining operations.

- C. Pursuant to Subsection J of 20.6.7.33 NMAC, upon discontinuing the operation of, or before moving tanks, pipelines, sumps, or other containment systems, all liquids shall be released to a location specifically authorized in the discharge permit, an alternate location subject to NMED approval, or otherwise properly contained, transferred, or disposed of in a manner that does not result in discharge to non-authorized areas.

C103 Truck and Equipment Washing Unit

- A. The permittee shall operate the existing SX/EW Truck and Equipment Wash Pad in accordance with the applicable requirements of Subsection C of 20.6.7.26 NMAC.

C104 Stormwater Management

- A. Stormwater shall be managed in accordance with the applicable requirements of Paragraph (4) of 20.6.7.17.C NMAC and the most recent version of the Sitewide Water Management Plan required by DP-459.
- B. The permittee shall inspect monthly all stormwater impoundments, conveyance channels, and collection ponds for evidence of stormwater accumulations that exceed designed capacities. To properly manage stormwater, the permittee shall ensure that the pumping capacity is adequate to maintain storage capacity in Reservoirs 6 and 7.

C105 Flow Measurement

- A. Pursuant to Paragraph (2) of 20.6.7.18.E NMAC, the permittee shall visually inspect all flow meters on a monthly basis for evidence of malfunction and repair and replace malfunctioning flow meters within 30 days of or as soon as practicable following discovery.

C106 Monitoring and Reporting

- A. Pursuant to applicable requirements of Sections 20.6.7.28 and 20.6.7.29 NMAC, the permittee shall collect, preserve, transport, and analyze all groundwater, process water, tailings slurry, impacted stormwater, seep, spring, and surface water samples from the facility in accordance with Table 1 of this Discharge Permit, and any additional requirements listed in this Discharge Permit. Table 1 provides a summary of monitoring and reporting requirements. Figure 1 of this Discharge Permit shows sampling locations.

- B. Samples of stormwater, PLS, and process water, including seeps, shall be analyzed for total and dissolved concentrations in accordance with Table 1. Samples of groundwater and springs shall be analyzed for dissolved concentrations in accordance with Table 1.
- C. The permittee shall submit monitoring reports to NMED in both electronic and hard copy format on a semi-annual schedule that contain all quarterly monitoring data and information collected pursuant to the requirements of this Discharge Permit, and the applicable requirements of Section 20.6.7.29 NMAC. Semi-annual reports are due by February 28 and August 31 of each year. If applicable to this Discharge Permit, data required to be submitted annually shall be submitted in the monitoring report due by February 28 of each year.
- D. Requests to change monitoring and reporting requirements may require modification or amendment of this Discharge Permit as required by the NMED Secretary. [20.6.2.7 NMAC]
- E. Groundwater
 - 1. Pursuant to Subsection B of 20.6.7.28 NMAC, “the permittee shall monitor groundwater quality as close as practicable around the perimeter and downgradient of each open pit, leach stockpile, waste rock stockpile, tailings impoundment, process water impoundment, and impacted stormwater impoundment.”
 - 2. Pursuant to Paragraph (1) of 20.6.7.28.B NMAC, the existing monitoring wells listed in Table 1 have been deemed appropriate by NMED for continued use as groundwater monitoring wells under this Discharge Permit. These groundwater monitoring wells, installed prior to the effective date of the Copper Mine Rule, have been identified to be constructed in accordance with the Copper Mine Rule.
 - 3. Pursuant to Subsection G of 20.6.7.28 NMAC, the permittee shall sample and analyze groundwater quarterly from the monitoring wells in accordance with Table 1, and the applicable requirements of Subsection F of 20.6.7.28 NMAC. Analytical results shall be submitted in the semi-annual monitoring reports in the format specified by Subsection C of 20.6.7.29 NMAC.
 - 4. Additional Groundwater Sampling Requirements
 - a. Pursuant to Subsection G of 20.6.7.28 NMAC, if total petroleum hydrocarbons (TPH) in Monitoring Wells 591-97-02, SX-6, SXIW-2, or any new monitoring well exceeds 5 mg/L, the permittee shall notify NMED of the results upon receiving the analysis and resample the monitoring well(s) for kerosene, ethylbenzene, naphthalene, and toluene (i.e., Organic Parameters II listed in Table 1) within two weeks of receiving the analytical results for the TPH analysis. The permittee shall notify NMED of the

kerosene, ethylbenzene, naphthalene, and toluene results upon receiving the analysis and they shall be included in the semi-annual monitoring reports in the format specified by Subsection C of 20.6.7.29 NMAC.

5. Installation of Additional Monitoring Wells

- a. The permittee shall, within 180 days of the effective date of this Discharge Permit (BY DATE), install two monitoring wells to evaluate current and future groundwater conditions to better define the Area of Open Pit Hydrologic Containment (Section 20.6.7.7 NMAC). One monitoring well shall be located east of Monitoring Wells 591-2007-01 and SX-2D, and the OPSDA as defined in Figure 1 of DP-1340. The second monitoring well shall be located within a northeast/southwest trending corridor between Fleming Pond and existing monitoring wells 591-2007-01 and 591-2007-02.
 - b. Pursuant to Subsection A of 20.6.7.28 NMAC, the permittee shall submit a monitoring well location proposal for NMED approval a minimum of 30 days prior to installation of the monitoring wells.
 - c. Installation of the monitoring wells shall be in accordance with Subsections B, C, D, and E of 20.6.7.28 NMAC.
 - d. The permittee shall notify NMED in writing a minimum of one week prior to the start of drilling for the monitoring wells. Upon completion of the installation of the monitoring wells, the permittee shall submit to NMED a monitoring well completion report for the newly installed monitoring wells in accordance with the applicable requirements of Subsection K of 20.6.7.28 NMAC.
 - e. Upon installation of the new monitoring wells, the permittee shall sample and analyze groundwater quarterly from the monitoring wells in accordance with Table 1, and applicable requirements of Subsection F of 20.6.7.28 NMAC. Initial and future analytical results shall be submitted in the semi-annual monitoring reports in the format specified by Subsection C of 20.6.7.29 NMAC.
6. Pursuant to Subsection H of 20.6.7.28 NMAC, the permittee is authorized to plug and abandon Monitoring Wells 591-2008-01, SX-4, SX-7, SX-9, SXIW-3, SXIW-4, SXIW-5, and SXIW-6 as follows:
- a. Monitoring wells shall be plugged and abandoned in accordance with the attachment titled *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions*, Revision 1.1, March 2011, and all applicable local, state, and federal regulations, including 19.27.4 NMAC.
 - b. The permittee shall submit documentation describing the well abandonment procedures. The well abandonment documentation shall be submitted to NMED with the next semi-annual monitoring report for DP-591 upon completion of abandonment procedures.

- c. Monitoring Wells GB001, Hornet, and the PLS Feed Pond Well have been plugged and abandoned under previous authorization from NMED; this Discharge Permit Renewal formally authorizes their removal from the DP-591 monitoring plan.
- d. Pursuant to Subsection B of 20.6.7.30 NMAC, NMED may require replacement monitoring wells.

F. Discharge Volumes

1. In addition to discharge volume reporting required by Subsection B of 20.6.7.29 NMAC, the permittee shall measure and report discharge volumes from flow meters listed in Table 1 of this Discharge Permit pursuant to Subparagraphs (g) and (h) of 20.6.7.20.C(1) NMAC and Subsections E and F of 20.6.7.29 NMAC for the following discharges:
 - a. The daily volume of process water (gpd) discharged from the SX/EW Plant to the Raffinate Tank or Raffinate Pond.
 - b. The daily volume of PLS (gpd) discharged to and from the PLS Feed Pond.
 - c. The daily volume of additional flows discharged from the SX/EW Tank House and SX/EW Tank Farm authorized in B104.C.
 - d. The average daily volume of impacted groundwater (gpd) pumped from extraction well SXIW-2.

G. Flow Measurement

1. Pursuant to Subparagraph (a) of 20.6.7.18.E.2 NMAC, the permittee shall submit a report of repaired or replaced flow meters in the semi-annual monitoring reports that include a description of any flow meter malfunctions with a statement verifying the repair and description of calibration of the flow meter pursuant to Paragraph (3) of 20.6.7.18.E NMAC.

H. Meteorological Data

1. Meteorological data shall be measured as stipulated in the NMA Master Document. The data shall be submitted to NMED in the monitoring report due on February 28 of each year as required in C106.C.

C107 Contingency Plan

- A. The permittee shall comply with all applicable contingency requirements and submit to NMED all applicable information or documentation specified in Subsections A through J of 20.6.7.30 NMAC.

- B. Pursuant to Subsection G of 20.6.7.30 NMAC, discharges of process water or seepage that exceed the standards of Section 20.6.2.3103 NMAC to unauthorized areas must be reported under Section 20.6.2.1203 NMAC and as required by D106.
- C. Pursuant to Subsection I of 20.6.7.30 NMAC, the permittee shall notify NMED of any significant erosion or condition that may compromise conveyance structures utilized in DP-591.
- D. The permittee has been required to submit to NMED for approval a proposed abatement plan for the Chino Mine pursuant to Section C114 of DP-1340. All abatement plans and activities shall be performed in accordance with Sections 20.6.2.4000 through 4115 NMAC and Paragraphs (3) and (4) of 20.6.7.30.A NMAC.
- E. If NMED or the permittee identifies any other failures of the discharge plan or system not specifically noted in this permit that may have the potential to impact water quality, NMED may require the permittee to develop and submit contingency plans and schedules for NMED approval to address such failures. [20.6.2.3107.A.10 NMAC]

C108 Closure Plan

- A. Closure of all mine units associated with this Discharge Permit shall be performed in accordance with the requirements of Section 20.6.7.33 NMAC and Section 20.6.7.34 NMAC, and in accordance with DP-1340, as applicable.
- B. Pursuant to Paragraph (4) of 20.6.7.33.F NMAC and Subsection F of 20.6.7.34 NMAC, the permittee shall submit for NMED approval 60 days prior to construction, a Construction Quality Assurance/Construction Quality Control (CQA/CQC) plan for any mine units regulated pursuant to DP-591 where cover is applied under an approved closure plan.
- C. For each mine unit closed, the closure period shall cease, and the post-closure period shall commence following NMED approval of a final CQA/CQC report that is in accordance with Subsection G of 20.6.7.34 NMAC.
- D. Post-Closure Requirements
 - 1. Post-closure requirements shall be performed in accordance with the applicable requirements of Section 20.6.7.35 NMAC, and in accordance with the Closure/Closeout Plan and associated materials submitted as part of this Discharge Permit. Pursuant to Subsection D of 20.6.7.35 NMAC, the permittee shall submit to NMED semi-annual reports pursuant to the schedule in Subsection A of 20.6.7.29 NMAC that include, but are not limited to, a description and the results of post-closure monitoring, any work completed during the preceding semi-annual period, any maintenance and repair work

conducted for any closure unit, status of post-closure activities, and semi-annual potentiometric maps.

2. Pursuant to Subsection E of 20.6.7.35 NMAC, the contingency requirements of Section 20.6.7.30 NMAC apply to any deficiencies discovered during post-closure monitoring and inspections, including, but not limited to, the requirements for possible corrective action plans, abatement plans, monitoring well replacement, reporting and correction of unauthorized discharges, and significant erosion of, or ponding of water on, a cover system.

C109 Financial Assurance

- A. The permittee shall maintain the existing and any revised joint financial assurance with NMED and the Mining and Minerals Division of the New Mexico Energy, Minerals and Natural Resources Department to cover costs associated with closure and post-closure activities approved under this Discharge Permit and DP-1340. [20.6.2.3107 NMAC]

Part D GENERAL CONDITIONS

NMED has reviewed the permit application for the proposed renewal and has determined that the provisions of the Copper Mine Rule and applicable groundwater quality standards will be met in accordance with this Discharge Permit. General conditions pursuant to 20.6.2 NMAC and 20.6.7 NMAC are listed below.

D100 Enforcement

- A. Any violation of the requirements and conditions of this Discharge Permit, including any failure to allow NMED staff to enter and inspect records or facilities, or any refusal or failure to provide NMED with records or information, may subject the permittee to a civil enforcement action pursuant to the WQA, NMSA 1978, Section 74-6-10(A) and (B). Such action may include a compliance order requiring compliance immediately or in a specified time, assessing a civil penalty, modifying or terminating the discharge permit, or any combination of the foregoing; or an action in district court seeking injunctive relief, civil penalties, or both. Pursuant to the WQA, NMSA 1978, Section 74-6-10(C) and 74-6-10.1, civil penalties of up to \$15,000 per day of noncompliance may be assessed for each violation of the WQA, NMSA 1978, Section 74-6-5, the WQCC Regulations, or this Discharge Permit, and civil penalties of up to \$10,000 per day of noncompliance may be assessed for each violation of any other provision of the WQA, or any regulation, standard, or order adopted pursuant to such other provision. In any action to enforce this Discharge Permit, the permittee waives any objection to the admissibility as evidence of any data generated pursuant to this Discharge Permit. The permittee does not

waive any argument as to the weight such evidence should be given. [NMSA 1978 Section 74-6-10, Section 74-6-10.1]

- B. Pursuant to the NMSA 1978, Section 74-6-10.2(A-F), criminal penalties may be assessed for any person who knowingly violates or knowingly causes or allows another person to:
1. Make any false material statement, representation, certification or omission of material fact in an application, record, report, plan or other document filed, submitted or required to be maintained under the WQA;
 2. Falsify, tamper with or render inaccurate any monitoring device, method or record required to be maintained under the WQA; or
 3. Fail to monitor, sample or report as required by a permit issued pursuant to a state or federal law or regulation.

D101 General Inspection and Entry Requirements

- A. Nothing in this Discharge Permit shall be construed as limiting in any way the inspection and entry authority of NMED under the WQA, the WQCC Regulations, or any other applicable law or regulation. [20.6.2.3107 NMAC, NMSA 1978, Section 74-6-9(B) & (E)]
- B. The permittee shall allow the Secretary or an authorized representative, upon the presentation of credentials, to [20.6.2.3107.D NMAC, NMSA 1978, 74-6-9(B) & (E)]:
1. Enter at regular business hours or at other reasonable times upon the permittee's premises or other location where records must be kept under the conditions of this Discharge Permit, or under any federal or WQCC regulation.
 2. Inspect and copy, during regular business hours or at other reasonable times, any records required to be kept under the conditions of this Discharge Permit, or under any federal or WQCC regulation.
 3. Inspect, at regular business hours or at other reasonable times, any facility, equipment (including monitoring and control equipment or treatment works), practices or operations regulated or required under this Discharge Permit, or under any federal or WQCC regulation.
 4. Sample or monitor, at reasonable times for the purpose of assuring compliance with this Discharge Permit or as otherwise authorized by the WQA, any effluent, water contaminant, or receiving water at any location before or after discharge.

D102 General Operational Requirements

- A. Mine units shall be designed in accordance with the applicable requirements of Section 20.6.7.17 NMAC.
- B. Mine units shall be operated in accordance with the applicable requirements of Section 20.6.7.18 NMAC.
 - 1. Pursuant to Subsection A of 20.6.7.18 NMAC, to the extent practicable, mine units shall be designed and operated in a manner that contemplates the closure plan, including identifying and segregating suitable material to construct covers and consideration of closure grading and drainage plans in the design and construction of operational mine units.
- C. The permittee shall meet all applicable setback requirements pursuant to Section 20.6.7.19 NMAC.
- D. The permittee shall provide written notice to NMED of the commencement, or recommencement of operations in accordance with Subsection C of 20.6.7.18 NMAC.

D103 General Record Keeping and Reporting Requirements

- A. The permittee shall retain written records at the copper mine facility as required pursuant to Section 20.6.7.37 NMAC.
- B. The permittee shall furnish to NMED, within a reasonable time, any documents or other information that NMED requests to determine whether cause exists for modifying, terminating and/or renewing this Discharge Permit or to determine compliance with this Discharge Permit. The permittee shall also furnish to NMED, upon request, copies of documents required to be kept by this Discharge Permit. [20.6.2.3107.D NMAC, NMSA 1978, 74-6-9 (B) & (E)]

D104 General Sampling and Analytical Methods

- A. Unless otherwise approved in writing by NMED, the permittee shall conduct sampling and analysis in accordance with the most recent edition of the following documents [Subsection B of 20.6.2.3107 NMAC]:
 - 1. American Public Health Association, Standard Methods for the Examination of Water and Wastewater (18th, 19th, or current)
 - 2. U.S. Environmental Protection Agency, Methods for Chemical Analysis of Water and

Waste, and other publications of the analytical quality laboratory, EPA.

3. U.S. Geological Survey, Techniques for Water Resources Investigations of the U.S. Geological Survey
4. American Society for Testing and Materials, Annual Book of ASTM Standards, Part 31. Water
5. U.S. Geological Survey, et al., National Handbook of Recommended Methods for Water Data Acquisition
6. Federal Register, latest methods published for monitoring pursuant to Resource Conservation and Recovery Act regulations
7. Methods of Soil Analysis: Part 1. Physical and Mineralogical Methods; Part 2. Microbiological and Biochemical Properties; Part 3. Chemical Methods, American Society of Agronomy

D105 Monitoring Well Abandonment

- A. The permittee shall submit a written request for NMED approval to amend or modify this Discharge Permit at least 30 days prior to the anticipated destruction or removal of any monitoring wells required by this Discharge Permit. After the permittee receives NMED approval, monitoring well plugging and abandonment shall be completed in accordance with the *Ground Water Discharge Permit Monitoring Well Construction and Abandonment Conditions*, Revision 1.1, March 2011, or according to regulations issued by the Office of the State Engineer in 19.27.7 NMAC, unless an alternate method is approved by NMED. [20.6.2.3107 NMAC]
- B. The request required in D105.A shall include the following information:
 1. A scaled map showing the location of the monitoring well(s) and the mine units it is intended to monitor;
 2. The purpose for plugging and abandoning the monitoring well(s);
 3. Details, if available, on the monitoring well(s), including depth-to-water elevation, top-of-casing elevation, construction and lithologic logs;
 4. Groundwater analytical results from a minimum of the most recent eight sampling events from the monitoring well(s);
 5. Proposed replacement well(s), if applicable;
 6. For any proposed replacement monitoring well(s), the same details of the proposed replacement monitoring well(s) as provided in D105.B.1, D105.B.3, and D105.B.4; and

7. New replacement wells require monitoring well completion reports pursuant to Subsection K of 20.6.7.28 NMAC.

D106 Reporting Requirements for Unauthorized Discharges

- A. In the event of a spill or release that is not authorized under this Discharge Permit, the permittee shall initiate the notifications and corrective actions as required in 20.6.2.1203 NMAC. The permittee shall take immediate corrective action to contain and remove or mitigate any damage caused by the discharge. Within 24 hours after discovery of the discharge, the permittee shall verbally notify NMED and provide the information required by Paragraph (1) of 20.6.2.1203.A NMAC, and to determine applicable monitoring and reporting requirements pursuant to Paragraphs (2) and (3) of 20.6.7.29.B NMAC. Within 7 days of discovery of a discharge reportable under 20.6.2.1203 NMAC, the permittee shall submit a written report to NMED verifying the oral notification and providing any additional information or changes. The permittee shall submit a corrective action report within 15 days after discovery of the discharge. [20.6.2.1203 NMAC]
- B. As part of the 24-hour spill notification requirements, the permittee shall submit a figure to NMED that clearly displays the location (or locations) of the spill and identifies nearby mine units and/or location information in latitude/longitude coordinates in decimal degrees (XX.XXXXXX and -XXX.XXXXXX, respectively), using a specified datum of WGS 84. Submittal of location information in Universal Transverse Mercator (UTM) format is also acceptable.

D107 Modifications and Amendments

- A. The permittee shall notify and obtain approval from NMED of a proposed change to the facility or the facility's discharge that would result in a change in the volume discharged; the location of the discharge; or in the amount or character of water contaminants received, treated or discharged by the facility, prior to implementing such changes. Such changes may require modification or amendment to this Discharge Permit, including payment of applicable fees as specified in Section 20.6.7.9 NMAC. [20.6.2.3107.C NMAC, 20.6.2.3109.E NMAC, 20.6.7.7.B(19) NMAC, 20.6.7.14 NMAC]
- B. As determined by NMED, for any proposed change that would meet the definition of a discharge permit modification as specified in Paragraph P of 20.6.2.7 NMAC, the permittee shall submit for NMED approval an application for modification of this Discharge Permit pursuant to Sections 20.6.7.10 NMAC and 20.6.7.11 NMAC. Plans and specifications shall be included in the requests as applicable, pursuant to Section 20.6.7.17 NMAC.
- C. As determined by NMED, for any proposed change that meets the definition of a discharge permit amendment as specified in Paragraph 19 of 20.6.7.7.B NMAC, the permittee shall

submit a request to NMED for amendment of this Discharge Permit pursuant to Section 20.6.7.14 NMAC. Plans and specifications shall be included in the requests as applicable, pursuant to Section 20.6.7.17 NMAC.

- D. Pursuant to Section 20.6.2.3109 NMAC, NMED reserves the right to require a discharge permit modification or amendment in the event NMED determines that the requirements of 20.6.2 NMAC are being or may be violated, or the standards of Section 20.6.2.3103 NMAC are being or may be violated. This may include a determination that structural controls and/or management practices approved under this Discharge Permit are not protective of groundwater quality, and that more stringent requirements are needed to protect groundwater quality.

D108 Compliance with Other Laws

- A. Nothing in this Discharge Permit shall be construed in any way as relieving the permittee of the obligation to comply with all applicable federal, state, and local laws, regulations, permits or orders. [20.6.2 NMAC, 20.6.7.8(D) NMAC]

Table 1 – DP-591 Monitoring and Reporting Summary

Monitoring Report Schedule of Submittal (Subsection A of 20.6.7.29 NMAC)							
1	January 1 - June 30 (Q1 and Q2 sampling quarters) – Semi-annual report due by August 31 of each year						
2	July 1 - December 31 (Q3 and Q4 sampling quarters) – Semi-annual report due by February 28 of each year						
3	Annual reports due by February 28 of each year						
Reporting Summary							
Annual Reporting Frequency	Description						
2	Monitoring reports – All applicable requirements of Subsections A through H of 20.6.7.29 NMAC, and C106.						
2	Additional discharge volume reporting required by C106.F						
Monitoring Schedule							
Area	Identification Number	Sampling					Notes
		type	Q1	Q2	Q3	Q4	
Reservoir 6	591-97-02	mw	ABW	ABW	ABW	ABCW	upgradient
	Reservoir 6	pw	AW	AW	AW	ABCW	Process Water
	SX-6	mw	ABW	ABW	ABW	ABCW	
SX/EW	PLS Feed Pond	pw	-	BCW	-	ABCW	PLS
	591-97-03	mw	AW	AW	AW	AW	
	SX-2S	mw	AW	AW	AW	AW	
	SX-2D	mw	AW	AW	AW	AW	
	591-2007-01	mw	AW	AW	AW	AW	
	591-2007-02	mw	AW	AW	AW	AW	
Raffinate Pond	Raffinate Pond	pw	-	ABW	-	ABCW	Process Water
	Raffinate Tank	tnk	-	ABW	-	ABCW	Process Water
	SXIW-2	mw/ew	-	-	-	ABCW	
	591-2007-03	mw	AW	AW	AW	AW	
Reservoir 7	Reservoir 7	pw	AW	AW	AW	ABCW	Process Water
	591-97-04	mw	AW	AW	AW	AW	
Fleming Pond	Fleming Pond	pw		AW		AW	
New MWs	TBD	mw	ABW	ABW	ABW	ABCW	Install 2 New MWs
Flow Meters	6	Reservoir 6 to Reservoir 7 (pumped)					
	10	SX/EW Plant Drain to Raffinate Tank (gravity)					
	11	Flow from Well SXIW-2 (pumped)					
	12	Flow from Dam 16 (pumped)					
	13	PLS Tank to SX/EW (pumped)					
	14	Reservoir 4A to Reservoir 6 or 7 (pumped)					
	15	Reservoir 17 to Reservoir 4A (pumped)					
<u>Sampling Analytical Suites:</u>							
A = Field parameters and indicator parameters: Temperature (°C), pH, specific conductance (µS/cm), sulfate, total dissolved solids (TDS)							
B = Inorganic suite: F, Cl, Al, As, Cd, Cr, Co, Cu, Fe, Pb, Mn, Ni, Se, U, and Zn							
C = Organic Parameters I: Total Petroleum Hydrocarbons (TPH)							
D = Organic Parameters II: Kerosene, Ethylbenzene, Naphthalene, Toluene if “C” exceeds 5 mg/L TPH (see C106.E.4)							
W = Depth-to-water measurement to the nearest 0.01 foot							

Explanation to Abbreviations and Symbols			
Type	Sampling Quarter	Suite B Sampling Analytes	
mw = monitoring well mw/ew = monitoring well and extraction well pw = process water tnk = tank TBD = to be determined	Q1 = Jan-Mar Q2 = Apr-Jun Q3 = Jul-Sep Q4 = Oct-Dec	F = Fluoride Cl = Chloride Al = Aluminum As = Arsenic Cd = Cadmium Cr = Chromium Co = Cobalt Cu = Copper	Fe = Iron Pb = Lead Mn = Manganese Ni = Nickel Se = Selenium U = Uranium Zn = Zinc

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Figure 1 - DP-591 Monitoring and Reporting Sample Locations

